

CLAIMS

1. Hydrostatic, mechanical, power-split transmission with continuously variable gear ratio which includes a hydrostatic part (1) consisting of one first hydrostatic unit (B) with variable volume and one second hydrostatic unit (A) with constant volume and one mechanical part (2) comprising one summarizing transmission and one range change transmission, characterized in that the summarizing transmission and the range change transmission are disposed axially staggered relative to the hydrostatic units.

2. Hydrostatic, mechanical, power-split transmission according to claim 1, characterized in that the summarizing transmission is designed as three-step planetary transmission comprising three planetary steps (P1, P2, P3) without ring gears, the planets of the planetary steps (P1, P2, P3) being directly or indirectly in contact with each other.

3. Hydrostatic, mechanical, power-split transmission according to claim 1, characterized in that the range change transmission is designed as four-step.

4. Hydrostatic, mechanical, power-split transmission according to any one of the preceding claims, characterized in that the clutch device (K1, K2, K3, KR) for the spur gear steps of the range change transmission are situated upon the output shaft (5), the clutch (K1) loosely connecting the output shaft (5) via a spur gear step (9), the clutch (K2) loosely connecting the output shaft (5) with the sun gear (13) of the first planetary set (P1) via a spur gear step (14), the clutch (K3) loosely connecting the output shaft (5) with the planet carrier of the second planetary set (P2) via a spur gear step (15) and the clutch (KR) loosely connecting the output shaft (5) with the planet carrier of the first planetary step (P1) via an intermediate gear.

5. Hydrostatic, mechanical, power-split transmission according to any one of the preceding claims, characterized in that there are provided a purely hydrostatic transition drive range for speeds between low reverse and low forward gears without a range transfer and without shifting of clutch devices and attached

thereto one continuously variable hydrostatic, mechanical range with power-split for higher speeds.

6. Hydrostatic, mechanical, power-split transmission according to claim 5, characterized in that in the purely hydrostatic transition range the rotational speed of the hydrostatic transmission part (1) is passed via one spur gear step (7) and via one other spur gear step (9) to the output shaft (5), wherein the clutch (K1) is closed from the start and remains closed during the whole drive range of the transition drive range and wherein by adjustment of the variable pump (B) the initial rotational speed can be adjusted between negative and positive rotational speeds within the drive range.

7. Hydrostatic, mechanical, power-split transmission according to claim 5, characterized in that the hydrostatic, mechanical, drive range with power-split has two forward drive ranges and one reverse drive range.

8. Hydrostatic, mechanical, power-split transmission according to claim 7, characterized in that the output for the first forward range results by shifting the clutch (K2), the power being transmitted from the sun gear (10) of the second planetary step (P2) to the output shaft (5) via the planets (11) of the planetary step (P2), the planets (12) of the first planetary step (P1), the sun gear (13) of the first planetary step (P1) and a spur gear step (14).

9. Hydrostatic, mechanical, power-split transmission according to claim 7 or 8, characterized in that the output for the second forward range results by shifting the clutch (K3), the power being transmitted from the sun gear (10) of the planetary step (P2) to the output shaft (5) via the planet carrier of the planetary step (P2) and a spur gear step (15).

10. Hydrostatic, mechanical, power-split transmission according to claim 7 or 8, characterized in that the output for the reverse range results by shifting the clutch (KR), the power being transmitted from the sun gear 10 of the planetary step (P2) to the output shaft (5) via the planet carrier of the planetary step (P1) and an intermediate gear.

11. Hydrostatic, mechanical, power-split transmission according to any one of the preceding claims, characterized in that the summarizing transmission with

the appertaining clutches can be pre-assembled in the rear transmission housing so that the front transmission housing can be slipped over via the pre-assembled unit and screwed with the rear transmission housing.

12. Hydrostatic, mechanical, power-split transmission according to any one of the preceding claims, characterized in that the hydrostatic units, pressure and lubrication pump, pressure filters, magnetic valves and electronic systems can be pre-assembled in a module which can be assembled on a lateral aperture of the front transmission housing.